Engineer Consultant Training

Hydrologic/Hydraulic Design
Kevin Marton – Bridge Hydraulics Engineer
kevin.marton@state.sd.us (605) 773-4995
Agenda

- South Dakota Drainage Manual
  - Implementation
  - SDDOT Master Retainer Agreement for Professional Engineering Services
  - Chapter Highlights
Implemented November 16, 2011

Implementation Statement from Director of Planning and Engineering

- The South Dakota Department of Transportation has oversight for some local government highway projects. Effective November 16, 2011, the newest version of the South Dakota Drainage Manual, date October, 2011 or later, will apply to local government highway projects if the preliminary hydrology or hydraulic design has not yet been started.
C. Preliminary Engineering Technical Requirement

3. General Requirements

d. Hydrologic/Hydraulic design will be in accordance with the edition of the South Dakota Drainage Manual (and its revisions) currently in place at the time of the execution of the Work Order.
Chapter 6 Documentation

- 6.2 Project Scheduling and Hydraulic Analysis
  - Preliminary HDS and Draft HDR
  - TS&L Layout
  - TS&L inspection
  - Final HDS and Final HDR
  - Preliminary Layout

- 6.3 Hydraulic Design Report
  - Draft versus Final
  - Distribution
  - Format and Content
Chapter 7 Hydrology

- 7.6 Flood Frequency
  - Guidelines and practices
    - Design Frequency and Headwater
    - Review Frequency and Headwater

- 7.7 Selection of Hydrologic Methods

- 7.8 Stream Gage Data

- 7.9 Regression Equations
Chapter 10 Culverts
- 10.2 Standard Practices
- 10.3 Design Criteria
- 10.4 Culvert Hydraulic Design

Chapter 11 Energy Dissipators
- Type Selection
- Design Considerations
- Riprap Aprons
Chapter 14 Bridge Hydraulics

- 14.2 Hydraulic Performance Criteria
- 14.3 Bridge Location
- 14.4 Stream Stability
- 14.5 Bridge Scour
Questions